

ABSTRACT OF THE DISCLOSURE

The invention of the present application provides a high-speed and small-sized optical interconnection device using wavelength-multiplexed light suitable therefor in order to make compatible between an increase in high-speed communication capacity of the optical interconnection device and an increase in high-speed communication distance thereof. According to the invention of the present application, a signal processing LSI is placed within a central portion of a main surface of a semiconductor substrate, and input/output units for transmitting and receiving optical wavelength-multiplexed lights are multi-chip integrated on the periphery of the main surface of the semiconductor substrate, whereby they are integrated into a single package, and a wiring length can be reduced and a physical signal band for each connecting wiring can be enlarged. Further, the signal processing LSI is made up of CMOS and a driver circuit for each optical transmitting/receiving element is comprised of a Si-Ge transistor circuit, whereby a modulated signal band can be enlarged and the performance of the input/output of optical signals from the device can be improved.

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